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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,415	09/19/2003	Richard Gill Bonner	71638	7458
7590	09/27/2005		EXAMINER	
Dennis V. Carmen Eastman Chemical Company P.O. Box 511 Kingsport, TN 37662-5075			BOYKIN, TERESSA M	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/666,415	BONNER ET AL.
	Examiner Terressa M. Boykin	Art Unit 1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 30 June 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-16 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 19 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____.   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/05</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

***Response to Amendment***

**I. Applicant's arguments filed 8-1-05 have been fully considered but they are not persuasive.**

In response to Applicant's argument that the reference(s) does, do, not contain the limitations on which the Applicant relies, those limitations are either not stated in the claims and/ or are considered inherent. Applicant's claims are so broadly set forth that the art of record remains anticipatory even when read in light of the specification, i.e. heat exchanger (direct contact) etc. these terms, as written, may be interpreted as specific types of an apparatuses *or a function of any apparatus* in which case the claims are anticipated.

Applicants have not satisfactorily demonstrated how the claims are not anticipated (or rendered obvious) over the reference **USP 4436782**. Applicant(s) are also reminded that patentability cannot be predicated upon an advantage or result that has not been satisfactorily expressly, or least implicitly, disclosed in the application as filed. Clinical Products v. Brenner, 255 F. Supp. 131, 149 U.S.P.Q. 475, 480 (D.D.C. 1966) Therefore, it is irrelevant whether the reference(s) includes (or excludes) those features or not.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 4436782 see abstract, col. 2 line 17 to col. 3 line 21 and example.**

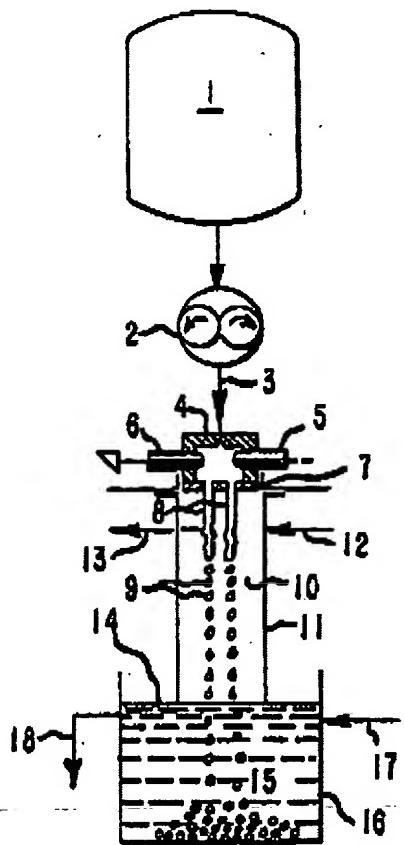
Applicants' invention is directed to a process for minimizing energy consumption during the production of polyethylene terephthalate where amorphous pellets are crystallized at elevated temperature and subsequently introduced into a solid state polymerization reactor, comprising removing heat from hot pellets from the solid state polymerization reactor, transferring heat removed to heat cool pellets which constitute a feed to a crystallizer.

U.S. Pat. No. 4,436,782 discloses a process for the granulation and further treatment of a polyethylene terephthalate (referred to as PET), in which a liquid oligomer having a viscosity number (or intrinsic viscosity) of from 0.08 to 0.15 formed at temperatures of from 260 to 280.degree. C. is forced through nozzles so as to form drops, which fall through a cooling zone inert-gas atmosphere into a water bath in order to allow the drops to solidify to give amorphous pellets. This document also discloses that a drum or conveyor belt can be used instead of a water bath to collect the drops in order to allow them to cool and solidify to give amorphous pellets.

With regard to the limitations as claimed in claims 2-16 note explanation of figure 1 below:

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Molten ethylene terephthalate oligomer is prepared in a reactor vessel 1 and is metered to pelletizing head 4 via gear pump 2 and jacketed transfer line 3. The gear pump 2 and transfer line 3 are maintained at a temperature above the melting temperature of the oligomer. The pelletizing head 4 is equipped with pressure bulb 5 and thermocouple 6 for pressure and temperature measurements. The pelletizing head temperature is controlled by means not shown to provide an oligomer melt viscosity of less than 3 poises. The reference notes that temperatures between about 260 C. and 280 C. are used. The pelletizing head is also fitted with removable orifice plate 7 containing multiple small diameter orifices, generally from about 0.25 to 2.0 mm. The pressure in the pelletizing head 4, developed by the gear pump 2 (generally in the range of 3 to 48 psig) forces the oligomer melt through these multiple orifices to form molten oligomer jets 8. The oligomer melt jets are directed outwardly from the orifices into an inert gas zone 10 where they disassociate generally within about one foot of the orifice plate into spherical droplets 9 under the influence of surface tension. These molten droplets fall through inert gas and are quenched/solidified into oligomer pellets 15 in quenching tank water 14. The overall oligomer droplet height (distance between orifice plate 7 and quenching water surface 14) must allow for dissociation of the molten jet and is usually from about 20 to 40 inches. After purging with inert gas preferably nitrogen, at ambient temperature (about 20.degree. C.), the inert gas is continuously introduced at slightly above atmospheric pressure through inlet 12 into inert gas zone 10, enclosed by a chute 11 which extends from orifice plate 7 to slightly below the water surface 14, in the quenching tank 16, to provide inert-gas blanketing and to prevent oligomer oxidative degradation. The excess inert gas is purged through exit 13. Quenching water temperature in tank 16 is maintained below boiling, preferably below 80.degree. C., and excess heat obtained from oligomer quenching is removed by adding cool water through inlet 17 and bleeding off excess water through overflow pipe 18. Water depth in tank 16 is usually about 2 to 35 inches. The water quenches the molten droplets after which the pellets are removed from the water tank 16 and are dried.



Thus, the reference discloses a polyethylene terephthalate prepared from the same components as claimed by applicants. It is important to note that applicants' claims do not specifically recite the particular temperatures which constitute "elevated". The specification states on page 4 lines 18 through 27 that the "elevated" temperature fall within a range of 260 to 300 degrees which overlaps or completely encompasses the reference's temperature range. Further, the crux of applicant's invention appears to be the "minimizing" of energy consumption during the production of PET. However, this

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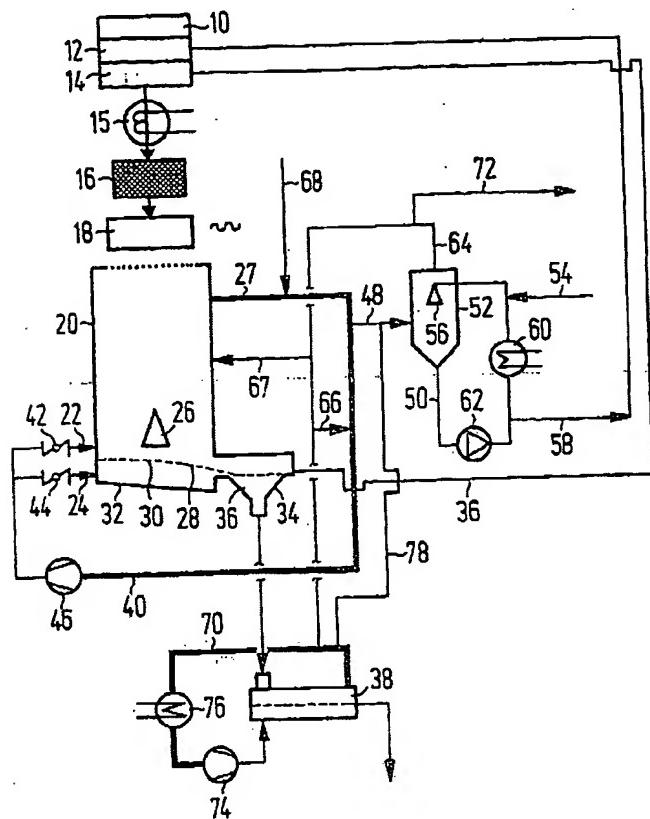
phrase is relative. Applicants have not expressed the initial energy consumption or the higher or lower limitations of which the "energy consumption" is now minimized from. With no initial figure or amount, the terms are meaningless.

Thus in view of the above, there appears to be no significant difference between the reference and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

**Claim 1 are rejected under 35 U.S.C. 102(b) as being anticipated by US JP 20040113300 see abstract, example and claims 1,3,4, 18.**

The reference discloses a method and device for producing spherical particles from a polymer melt wherein PET granulate is produced by supplying a precondensate, after the esterification and/or reesterification and pre-polycondensation of ethylene glycol and/or butane diol in the PBT process, and terephthalic acid to a reactor which has a partial vacuum applied to it is known. In this way, the viscosity of the largely liquid and short-chain polymer is increased, and liberated ethylene glycol and/or butane diol is returned to the esterification and/or reesterification. After the reactor treatment, the polycondensate is cooled in water and cut into granulate, in order to obtain cylindrical pellets, which are largely amorphous.

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With regard to the concurrent or countercurrent flow the reference discloses that the air supplied underneath the slanted surface 30, which exercises the function of a fluidized bed, via the intake opening 24 is to be supplied at a temperature at which the crystallization speed for the pellets to be produced is optimal. This means approximately 160. C. for the production of PET spheres and .ltoreq.130.. C. for PBT pellets. The air supplied via the opening 22 above the surface 30 is to be below the temperatures indicated previously, since it is heated through heat transfer from the falling droplets as it flows through the tower 20. In order to perform an optimization in this regard, a connection 67 leads from the line 64, which comes from the spray loop 50, to the tower, via which purified air of relatively low temperature (approximately 20 - 30 C.) is introduced directly into the tower 20, through which the temperature of

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air flowing through the tower 20 is reduced overall. Therefore, air of a desired relatively high temperature may be supplied in the region of the fluidized bed 30, without the optimum crystallization temperature being exceeded inside the tower 20, since cooler air is mixed in via the line 67, as described.

Thus, in view of the above, there appears to be no significant difference between the reference and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

**Correspondence**

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is ( 571-272-1700).

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb



Examiner Terressa Boykin  
Primary Examiner  
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